Buyer-Seller Relationship as a source of Interactive Learning and Innovation: the Malaysian Automotive Industry Perspective

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ABSTRACT

The paper looks at the buyer-seller relationship between Malaysian national car companies and their local automotive parts vendors as a source of interactive learning and innovation. Innovative activities are used as the measurement for interactive learning and innovation and the IMP interaction approach is used to analyze the interaction between the buyer and seller. Trust and commitment are the classic buyer-seller relationship variables that can lead to interactive learning and innovation. The research proposes a triangulation approach combining semi-structured interviews of focal relationships followed by a quantitative survey of the automotive parts vendors.

Keywords

Interactive Learning, Innovation, Innovative Activities, Buyer-Seller Relationship, Trust, Commitment

1.0 INTRODUCTION

To compete successfully, contemporary organizations are structured on the basis of a new set of operating assumptions, including linking to customers and suppliers as a way of managing innovation (Brown & Eisenhardt 1995; Fatimah, 2001; Assis 2003; Roy, Sivakumar, & Wilkinson 2004). Towards this end, buyer-seller relationships form an important avenue for learning and thus contribute towards knowledge generation and innovation (Todtling & Kaufmann, 1999; Mikkola, 2003; Doloreux, 2004). This argument is in sharp contrast to the traditional marketing assumption that 'value creation and innovation' is the task of the supplier, or that new products are developed by the manufacturer alone.

The above paradigm was established during earlier research which had shown that innovation also originates from suppliers and users, not just from within the company or from manufacturers looking at what the user needs and then developing it. Innovation may be sourced from development by materials and parts suppliers and by firms looking at what the user has actually done to the product (by way of modification or further development) and then adopting it (von Hippel, 1988; Hakansson, 1987; Rothwell 1994).

Innovation being a successful effort at commercializing knowledge is learning based. It thus follows that innovative performance resulting from buyer-seller relationships is rooted in the processes of 'interactive' learning where elements of long-term relationships like authority, loyalty, and trust are necessary preconditions for this form of learning (Lundvall, 1998). The structure of buyer-seller relationships are often characterised by continuity, complexity, symmetry and informality (Hakansson & Snehota 1995). In Europe, for instance, it is not uncommon for major buyer-seller relationships to be long-term to a degree of 10-20 years. It is complex for instance, in terms of the number and types of individuals involved and the use of relationships for multiple purposes. Unlike the consumer market, there is a symmetrical distribution of resources and capabilities. In the development of relationships, there is often a low degree of formalization.

Within the global automotive industry inter-firm structures are increasingly patterned according to the Japanese system of lean production, in which assembler-supplier relations are regarded as critical. The system distinguishes between different types of suppliers and aims at a distribution of responsibilities and competencies among them. Competitiveness is innovation driven with learning forming the basis for innovativeness. In the Malaysian automobile industry, the national car manufacturer Proton is at the forefront of such learning objective. Unfortunately, as some have suggested, the collaborative effort carried out through the development of a selective vendor network has been blamed for impeding Proton's drive for competitiveness. Other national car companies such as Perodua are not burdened with such priorities (Simpson, Sykes & Adini, 1998; Leutert & Sudhoff, 1999).

The possibility of choosing learning partners through unique collaborative activities between buyers and sellers in the domestically grown Malaysian automobile sector provides a rich ground to test the linkage of learning and innovation. This paper therefore seeks to examine the role that interaction within automotive buyer-seller (i.e. the assembler and its parts supplier) business transactions play in fostering interactive learning and innovation within the Malaysian automotive industry. This is done through the argument that the relationship between the buyer and seller can be forged and profiled through the linking of activities, sharing of resources and the bonding of actors of the two firms; thus making it possible to measure the level of buyer-seller interaction (Hakansson & the IMP Group, 1982). A broad definition of innovation is adopted where both adoption and adaptation of first world technology new to the firm is counted as innovation, appropriate within a developing country context like Malaysia (Hobday, 2000). Innovation is to be measured by means of identifying innovative activities within the buyer-seller relationship dyad (DeBresson, 1996). Trust and commitment are considered as critical towards building long-lasting buyer-seller relationships.

Key research questions that may be raised within the Malaysian automotive industry perspective are as follows:

1. How far developed are the classic buyer-seller relationship antecedents, trust and commitment within the Malaysian auto buyer-seller relationship dyad?
2. How do the antecedents trust and commitment contribute to the process of interactive learning within the Malaysian auto buyer-seller relationship dyad?
3. How has buyer-seller interactive learning within the automotive industry contributed towards innovation within the local auto industry?

The paper is organized into four sections. The background literature section which follows reviews the literature on knowledge, interactive learning and innovation. The section also discusses the Interaction Approach and the use of innovative activities to measure innovation. A proposed research model along with hypotheses is also found in this section. The paper concludes with sections on the proposed methodology of research as well as a discussion on the possible research implications.

2.0 BACKGROUND LITERATURE

2.1 The link between knowledge, interactive learning and innovation

The management of knowledge is the only way to achieve sustainable competitive advantage in today's markets (Drucker, 1969; Nooteboom 2000). This stance is understandable as knowledge is a necessary precursor to innovation. It has been widely documented in literature that innovation is important to firms in order for them to achieve and maintain competitive advantage (Chandrashekaran, Mehta, Chandrashekaran & Grewal, 1999; Afuah, 2003). The knowledge-based view of the firm posits that knowledge assets embedded in culture, routines, individuals and others, may produce long-term sustainable competitive advantage by enhancing the firm's ability to effectively apply the existing knowledge to create new knowledge (invention) and to take action that forms the basis for achieving competitive advantage (Alavi & Leidner, 2001).

The acquisition of tacit or explicit knowledge involves learning at both the individual and the organization level. Tacit knowledge is reflected by a person's skills or a firm's routines. Since it is difficult to articulate tacit knowledge, its transfer is restricted to face-to-face contacts (Senker & Faulkner, 1996). This restriction does not apply to explicit knowledge as it can be codified by means of modern communication technologies and easily made available across the world. This explicit knowledge has then to be internalized, which means that it has to be converted into tacit knowledge, in order for it to be useful in a different context (Nonaka & Takeuchi, 1995).

Learning by interacting is crucial to innovation as it describes how companies learn while interacting with other companies especially when described in the context of interaction between buyers and sellers (Lundvall, 1998; Nooteboom 2000; Fatimah, 2001). The argument is that knowledge creation is social in nature, and that social exchange or interaction is a core process in knowledge creation (Brown & Duguid, 1991). Tacit knowledge, which is an important input in innovation, can only be achieved through interactions on a personal level such as between buyer and seller firm members (Senker & Faulkner 1996). Similarly, it is important to emphasize the importance of common values, goals and strong relationships in knowledge creation (Nonaka & Takeuchi 1995). It is because of this interactive and therefore social character that learning by interacting has been found to be significant towards generating innovative activities in the buyer-seller relationship (Fatimah, 2001; Mikkola, 2003).

2.2 The Interaction Approach and buyer-seller relationship

The Interaction Approach posits that the relationship between the buyer and seller can be forged and profiled through the linking of activities, sharing of resources and the bonding of actors of the two firms; thus making it possible to measure the level of buyer-seller interaction (Hakansson and the IMP Group, 1982; Hakansson & Snehota, 1995; Laage-Hellman, 1997). In this approach, the process characteristics consist of mutual adaptations, cooperation and conflict, social interaction and the

establishment of routines. Mutual adaptations reflect the need for coordination of activities, and this is often a prerequisite for long-term relationships. The coexistence of an atmosphere of cooperation and conflict is present in any business relationships with social interaction playing a pivotal role as individuals from both sides get to know and trust each other thus paving the way for commitment beyond the immediate task (Hakansson &d the IMP Group, 1982; Hakansson &d Snehota, 1995).

A model of buyer-seller interaction is given in figure 1.

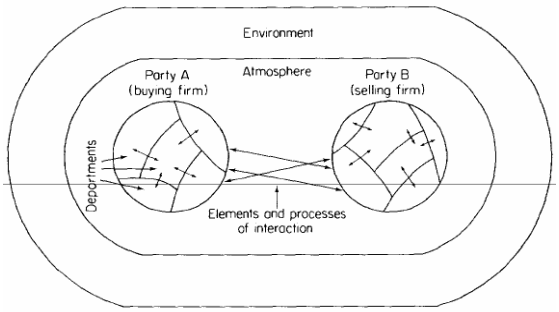

Figure 1: Main elements of the interaction model (Source: Hakansson, 1982)

The above model provides the basic model of the dyadic relationships of two parties A and B. A business relationship is established as two companies establish connections at the activity, resource and actor layer. A relationship between two companies has a profile in terms of activity links, resource ties and actor bonds. Activity links refer to activities that are administrative, technical or commercial that can be connected to each other as a result of close relationships between the two companies. Resource ties connect the various resources found in the two companies as a result of the relationships. Actor bonds connect and influence how the two actors perceive each other. The buyer-seller dyad is surrounded by the immediate atmosphere between the two parties concerned and the external environment which is beyond the influence of the dyad. The immediate atmosphere factors would consist of factors such as trust and commitment. The dyad is useful in understanding the value adding activities carried out between two firms such as innovation (Hakansson & the IMP Group, 1982; Hakansson & Snehota 1995; Laage-Hellman, 1997). Figure 2 below illustrates the dyadic function of the buyer-seller relationship.

The degree to which the team effect will come into play will depend a lot on the substance of the relationship in all three dimensions. For the dyad to become a quasi-organization depends on how many new resources are created, novel combinations of activities emerge and knowledge is gained i.e. on the extent of innovation generated by the dyad (Hakansson & Snehota, 1995).

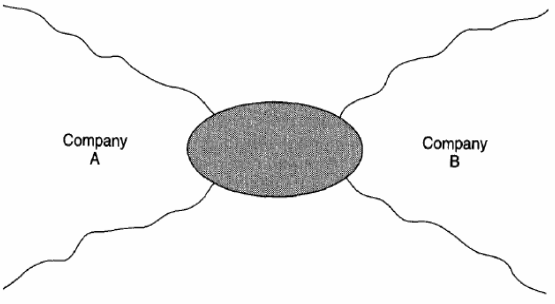

Figure 2: The team effects of activity links, resource ties and actor bonds in the dyadic function of a business relationship (Source: Hakansson & Snehota, 1995)

2.3 Innovative activities as a measure of innovation

DeBresson (1996) proposed *innovative activities* as a measurement of innovation and described it as 'an *ex ante* quantification of a surrogate indicator used to measure and observe innovation'. *Ex ante* in this case is used to describe the act of examining the facts as they happen. While innovation cannot be measured as it happens, it can be measured via a broader set of related phenomena which represent the endeavors or attempts at innovation. However, for the innovative activities to result in an actual innovation in the Schumpeterian (1947) sense, as an economic activity that changes the production function, a lot depends on the extent of adoption, adaptation, improvement, or inducement of complementary and auxiliary support techniques (Hobday, 2000; DeBresson 1996; Fatimah 2001). This is the gist of the items being measured in innovative activities and they occur in the here and now. In short, innovative activities is not so much concerned with the development of a new product but rather with the activities that can lead to an innovation irregardless of whether it is radical or incremental. The measurement is in the commercial benefit that can be derived from the new product, process, new market, materials supply or organization. The competitiveness of the innovation is its timing irregardless of whether an innovation is radical or a modest improvement. In this sense, it is steeped in the Schumpeterian tradition of innovation economics (DeBresson 1996) and differs from other *ex post* measurements of innovation.

Utilizing innovative activities to measure innovation would thus be in sync with Hobday (2000) on the use of a broad definition of innovation for developing countries. Furthermore, innovative activities would include adoptions and imitations as there is no fundamental difference between adoption and outright innovation. DeBresson (1996) argued that since the economic effect of innovation resides in the cumulative effect of small, discreet changes, then a focus on innovative activities would lead to a gain on the timeliness of measurement (it being suitable for management action). This measurement for innovation is also in agreement with the observations of Lall (2000) that it is crucial for a

developing country to acquire, utilize, adopt and improve technologies already established in more advanced countries. This is perhaps why studies involving buyer-seller relationships and innovation have mostly been carried out in the developed countries looking at innovation that is new to that industry (Mikkola, 2003; Geffen & Rothenberg 2000; Laage-Hellman, 1997).

According to DeBresson (1996), 'all innovative activities attest to learning and the creation of new techno-economic knowledge in the economy. By identifying where new knowledge is being created -it is capturing where new productive factors are being created - a broader and perhaps as important a phenomena as the most discreet innovation process'. This perspective is in agreement to that of Lundvall's (1998) concept of interactive learning. Interactive learning can thrive in inter-firm relationships where elements of 'rigidity'- of long-term non-market relationships involving authority, loyalty and trust- are necessary to make learning possible. Innovative activities are thus seen as the outcome and output indicators of cumulative interactive learning and the results of efforts and cognitive processes of various norms, habits, rules as well as capabilities, competence and skills (DeBresson, 1996; Lundvall, 1998; Fatimah, 2001).

2.4 Proposed model and hypotheses

In devising the framework proposed in this paper the scope has been limited to the automotive industry rather than the broad strokes across a multiplicity of industries. The intended relationship factors of study have been limited to the internal relationship factors of trust and commitment. The research model designed (Figure 3) focuses on these factors internal to the buyer-seller relationship and its influence on interactive learning and innovation.

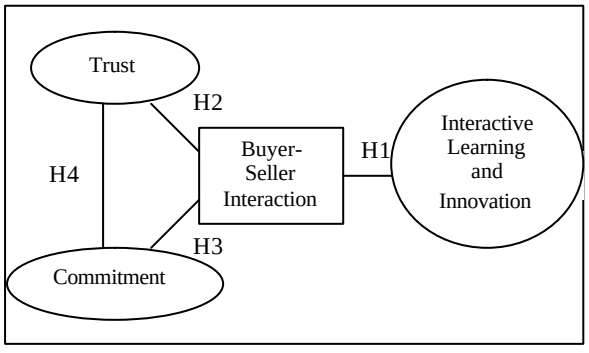

Figure 3: Proposed research model on buyer-seller Interaction and Innovative Activities.

2.4.1 Buyer-seller interactions and interactive learning and innovation

Interactions are the essential ingredient in building long lasting relationships between firms. It involves communication between two parties but transcends the act of passing of ideas and messages alone. It occurs at both the formal and informal level and can be between various levels of employees. Interactions may not have a business communication goal (Mohr & Nevin 1990; Mohr, Fisher & Nevin 1996), but all interactions build the atmosphere of the relationship (Hakansson & IMP Project Group, 1982). Thus, unplanned casual meetings between technicians of two companies in one of their cafeterias may not have any business communication objective but may lead to a discussion that can lead to innovative ideas (Orr, 1990). At the other extreme, interactions could consist of purposely structured meetings prior to the entering of a formal legal contract (Dwyer, Schurr, & Oh, 1987). In Interaction Theory, the relationship between the two companies would consist of various formal and informal activities between members of the two actor firms, utilising their various resources. Thus broadly speaking, interactions may not only involve communication exchanges using letters, faxes, e-mails, meetings, electronic data interchange, internet chats etc. but also include purposeful work arrangements like joint projects teams, joint training, consultation and the like. For the automotive industry this may include seconded staff, joint-training, supervision, collaboration as well as others.

Buyer-seller interactions may be categorized as either quantity of interaction, scope of interaction, or mode of interaction. These categories were derived from the rather expansive IMP database. The first category, namely *quantity* of interaction, has been widely researched (Dwyer, Schurr & Oh, 1987). The common research references have been to sales control systems for the volume and/or duration of customer meetings and includes reports on topics discussed in the meeting. These field reports are useful for the sales organization to form decisions or take action, usually as a result of further discussions and meetings. On the buyer side, it is common for purchasing, engineering, or R&D staff to consider what was learned from the interaction with supplier representatives (Jap & Ganesan 2000). Interactions among team members would increase as joint projects progresses and would be at its peak when the project is at the most critical stage (Leonard-Barton 1993).

S*cope* of interaction signifies the quality and nature of interaction that facilitates innovative activities. It includes meetings between different hierarchies (scope widens when personnel from different levels are involved), between different divisions (scope increases if interactions span several divisions), and the level of coordination between buyer and seller. Laage-Hellman (1997) noted that the Cummins-Toshiba collaboration for ceramic components was successful partly because of a cultural fit that included interactions at multiple levels. In the buyer-seller context of the auto industry, multiple levels of interaction within the auto industry enable close coordination between the part supplier, the assembly line,

and the factory itself (Clark & Fujimoto, 1990; Sako, 1994).

The term *mode* of interaction is used to denote the richness of the interactions not covered by the quantity and scope of interactions (e.g., certain communication modes are more preferable in certain contexts). Interactions that include informal relationships are richer than those confined to formal relationships (Hakansson & Lundgren, 1995). Certain informal interactions, such as Xerox technicians meeting in a cafeteria over copier machine breakdowns (Orr, 1990); have been proven to be extremely powerful in generating innovation.

Buyer-seller interactions are a hotbed for both the interactive learning of Lundvall, (1998) and the creation of techno-economic knowledge of DeBresson (1996), forming the basis of knowledge transfer. It is also seen as fundamental to the adaptive learning process (Tyre and von Hippel, 1997). Rothwell (1994) has expressed interaction as essential to innovation. Thus the first hypothesis can be summed up as follows:

Hypothesis 1 (H1): The greater the extent of buyer-seller interaction, the greater the interactive learning and innovation in buyer-seller relationships.

2.4.2 Trust and buyer-seller interaction

For innovation to flourish it is very important that there is free flow of knowledge. Knowledge sharing is a means of binding together the competencies of the two parties in the dyadic relationship of the buyer and seller. In such as situation, trust plays a pivotal role in successful collaboration as it is the only way to overcome the risk of opportunistic behavior. Trust is defined as the 'mutual expectations regarding consistency in behaviour and full, truthful revelation of relevant information and loyalty in difficult times. It is crucial to 'interactive learning' and innovation' (Lundvall, 1998). It is the extent to which one partner may depend on another to look after its business interests and studies have shown that trust is a vital element of a business relationship and the intensity of interactions (Morgan and Hunt, 1994; Joshi and Stump, 1999; Sako 1992). The degree of trust will determine the extent to which organizations are willing and able to interact (Athaide, Meyers and Wilemon, 1996). The individual actor's attitude and behavior or reputation plays an important role (Hakansson, 1982). Whenever, two parties enter into collaborative innovation, it usually means that the two parties are committed to each other, with the pay-off being shared benefits. For example, in joint product development it is the benefits from the new product or technology.

According to Sako (1992), there are three kinds of trust: contractual trust, competence trust, and goodwill trust. Contractual trust operates on the principle that the buyer and seller will be true to the contract. The focus of the paper is on the two types of trust which are relevant to interactive learning and the creation of techno-economic knowledge in supply chain relationship.

Competence trust. Competence trust refers to a firm's expectations about the ability of the other party to carry out particular activities relevant to its role. In the context of new product development, Madhavan and Grover (1998) offered a similar construct, "trust in team member's technical competence." A team member must not only feel confident of the other members' technical abilities to resolve the current problem but also must feel confident that the team member would be able to solve new problems as they emerge. Madhavan and Grover (1998) suggested that trust in technical competence grows with past experiences and feedback about small but progressive project successes. Given the inter-organizational nature of innovative activities, the buyer and seller must have mutual technical confidence: the buyer that the seller will be able to supply and the seller that the buyer will be able to use the product and/or service ordered (Frazier 1999). A mismatch in competence trust would lower the chances of innovation in the relationship. The greater the amount of competence trust in a relationship, the less the need for repeated explanations. Such "proven competence" would mean less frequent but more high-quality, valuable interactions, resulting in increased innovative activities (Nooteboom, Berger, & Noorderhaven 1997). Partners must have competence trust in each other to start doing business with each other (Lambe, Spekman, & Hunt 2000). Trust might be obtained through market reputation or past positive experience with another division of the firm. Proven and personally experienced competence of relationships in existing knowledge domains as well as each partner's reputation for competence are important to innovative activities (Nooteboom, De Jong, Vossen, Helper, & Sako, 2000). The greater the competence trust parties have in each other, the more effective the effect of interaction on interactive learning and innovation.

Goodwill trust. Goodwill trust refers to the degree to which one partner trusts the other to look after its interests without explicitly asking for such help (Sako, 1992). The greater the goodwill trust, the more likely interactions are to be valued by the participants, hence leading to more frequent interactions. The parties will do each other favors with the understanding that neither will take undue advantage and that both will assume new initiatives with respect to an existing innovation. Hakansson and Lundgren (1995) called the outcome of this goodwill trust an informal arrangement for technological development. Interactions will be more informal, and knowledge creation and transfer will be at the tacit level. Goodwill trust facilitates the sharing of information that is proprietary and yet critical to interactive learning and innovation.

Thus the second hypothesis can be simply stated as:

Hypothesis 2(H2): The greater the trust between the buyer and the seller, the greater the impact of interaction on the interactive learning and innovation in buyer-seller relationships.

2.4.3 Commitment and buyer-seller interaction

A second measure of relationship atmosphere is customer commitment, which is defined as the customer's durable intention to develop and sustain the relationship with the supplier in the long term (Anderson & Weitz, 1992; Dwyer et al. 1987; Morgan and Hunt 1994). Committed customers will offer more value to their suppliers through their contribution to the ongoing relationship. Mohr and Spekman (1994) have shown the positive impact of customers' commitment on sales (i.e. direct functions). Indirect functions, such as collaborative innovation development, are also likely to be fulfilled when partners are committed (Walter & Ritter 2003). Customer commitment can be described along four dimensions of loyalty, willingness to make short-term sacrifices, long-term orientation, and willingness to invest in the relationship (Anderson & Weitz, 1992; Ganesan, 1994).

An aspect of commitment is reputation in that a company may wish to be perceived as being persistent, consistent and reliable. Commitment in buyer-seller relationships involves "stability and sacrifice" and allows the coordination advantages of vertical relationships and the entrepreneurial advantages of separate ownership (Anderson & Weitz 1992). Asymmetry in commitment exists in relationships where one partner shows more commitment than the other. Commitment is an increasingly important component in innovation in the networked environment (Gundlach, Achrol & Mentzer, 1995). It is demonstrated by a willingness to dedicate specialized assets for a particular relationship, thus demonstrating that the buyer and seller can be relied upon for future support. Commitments involve pledges, credible commitments, idiosyncratic investments, and the dedicated allocation of resources, which become specific to a relationship (Anderson & Weitz, 1992). Sustained communication between parties is useful in shaping positively viewed commitment in terms of investments, attitude, and long-term orientation. In other words, commitment will facilitate two-way communication (Anderson & Weitz 1992) based on interactions.

Thus the third hypothesis:

Hypothesis 3 (H3): The greater the commitment between the buyer and the seller, the greater the impact of interaction on interactive learning and innovation in buyer-seller relationships.

2.4.4 Trust and commitment

As shown in several empirical studies, trust and commitment are not independent of each other in inter-organizational relationships: Trust of a relationship partner has a positive impact on relationship commitment (Ganesan, 1994; Morgan & Hunt 1994).

Hypothesis 4 (H4): The greater the trust between the buyer and the seller, the greater the commitment between the buyer and the seller.

3.0 METHODOLOGY

The methodology chosen for this work has been called Triangulation (Yin, 1994) and is intended to reduce bias. With triangulation, multiple sources of evidence are used to essentially provide multiple measures of the same phenomenon and hence reduce problems of construct validity and reliability. The unit of analysis is the automotive buyer-seller dyad Proton or Perodua as the buyer and their automotive parts vendor as the seller. Focal or key relationships between the automaker and their Tier 1 or Tier 2 supplier are to be chosen to form exploratory case studies on how buyer-seller relationships can be a source for interactive learning and innovation (Bryman, 1999). These case studies are critical in testing the formulated theories within the Malaysian automotive industry context. Semi-structured interviews would be used to interview the buyers' staff (probably purchasing managers, vendor development unit executives and/ or production executives), as well as the selected vendor's (seller) staff (probably sales or production executives). Direct observation of the interactions where possible will also be made. The case studies will be followed by a survey of automotive parts vendors utilizing a quantitative survey instrument based on established literature that has taken into account the results of the aforementioned focal dyadic case studies. Appropriate non-parametric statistics will be used for the analysis of the quantitative survey.

4.0 DISCUSSION AND CONCLUSION

This paper contends that in an industrializing country context like Malaysia innovation should be viewed more as acquisition, utilization, adoption and adaptation of already established first world technology with *innovative activities* a suitable measurement. The extent of interaction by actors, their activities and resources used should be an indicator of the degree of interactive learning and thus contributes positively to innovation by the buyer-seller automotive dyad. There exist joint-ventures and consultancies involving foreign resources and expertise, with the vendor as recipient, but these should be seen as part of the process of technology transfer in the form of adoption and adaptation of the technology concerned. In most cases the automotive

maker such as Proton act as the broker for the joint-venture (Simpson et al., 1998).

Trust and commitment could be the defining factors in this context as it would affect the capacity of the vendors to absorb new knowledge. The absorptive capacity is dependent on the vendors' ability to assess, embrace and utilize new knowledge (Cohen & Levinthal 1990). The emphasis on trust in managing buyer-seller relationships have however not been widely appreciated in the Malaysian automotive industry (Simpson et al 1998). Nevertheless, the research would be able to assess the role imparted by trust and commitment in managing interactive learning and therefore the impact on innovation in buyer-seller interaction in the Malaysian automotive industry.

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